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ASSIGNMENT BOOKLET 2A

MAT1225 Mathematics 14
Module 2: Section 1 Assignment

FOR STUDENT USE ONLY	
Date Assignment Submitted: _____	(If label is missing or incorrect) Student File Number: _____
Time Spent on Assignment: _____	Module Number: _____

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Assignment Grading: _____

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Student's Questions and Comments

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Teacher's Comments

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Teacher

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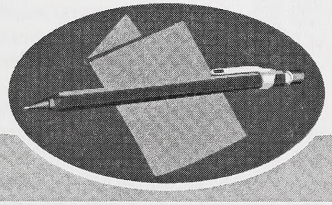
Mathematics 14

Module 2

Patterns and Equations

Assignment Booklet 2A



Learning Technologies Branch

Alberta LEARNING

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Section 1 Assignment	30	
	30	

Teacher's Comments

Mathematics 14
Module 2: Patterns and Equations
Assignment Booklet 2A
Section 1 Assignment
Learning Technologies Branch
ISBN 0-7741-2509-8

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Teachers	✓
Administrators	
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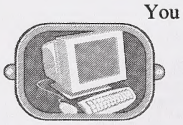
General Public	
Other	



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ASSIGNMENT BOOKLET 2A
MATHEMATICS 14: MODULE 2
SECTION 1 ASSIGNMENT

Your mark for this module will be determined in part by how well you do your assignments.

This Assignment Booklet is worth 30 marks out of the total 100 marks for the assignments in Module 2. The value of each assignment and each question is stated in the left margin.

Work slowly and carefully. If you have difficulty, go back and review the appropriate lessons.

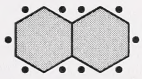
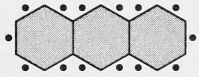
Be sure to proofread your answers carefully.

30

Section 1 Assignment: Patterns and Puzzles

Read all parts of your assignment carefully and record your answers in the appropriate places. Clearly show how you arrived at your answers by showing your work.

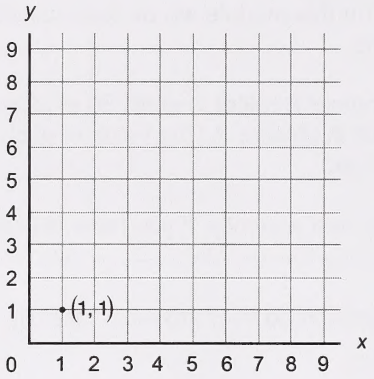
(3) **1.** A banquet hall uses hexagonal tables. The following table shows the number of people seated compared to the number of tables. What pattern do you find? Write the pattern in algebraic form.

Number of Tables (t)	Number of People Seated (p)
1	6
2	10 
3	14 

Turn to Section 1: Lesson 2 in the Module 2 Student Module Booklet.

(2)

2. Plot the ordered pairs $(2, 4), (1, 9), (8, 3)$, and $(5, 7)$ on the co-ordinate grid that follows. Label each point with its ordered pair. The point $(1, 1)$ is plotted as an example.

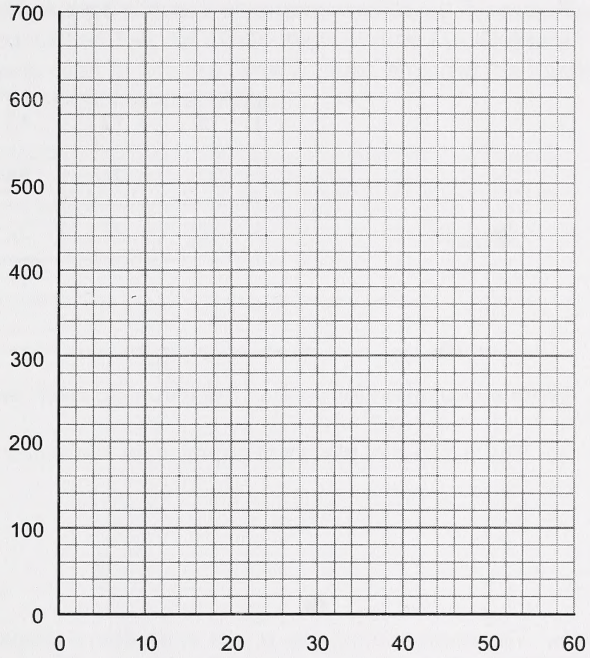


Turn to Section 1: Lesson 3 in the Module 2 Student Module Booklet.

(4)

3. The tip of the second hand of a clock moves around the clock face once a minute. The distance a second hand on a large clock travelled is given in the following table. Graph the data on the supplied grid. Is this a linear relationship? If it is, draw a line through the points. (Don't forget to give the graph a title and to label the axes.)

Elapsed Time in Seconds (t)	Distance the Tip of the Second Hand Has Travelled in Centimetres (d)
1	11
5	55
10	110
30	330
55	605



Turn to Section 1: Lesson 4 in the Module 2 Student Module Booklet.

(4) **4.** Solve the following incomplete magic square. Find the magic number for this square. Show your work for each empty square.

		12
7	27	

Turn to Section 1: Lesson 5 in the Module 2 Student Module Booklet.

(1) **5.** Sam says the following array is from the January 1923 calendar. Is Sam being truthful?

16	17	18
23	24	25
30	31	32

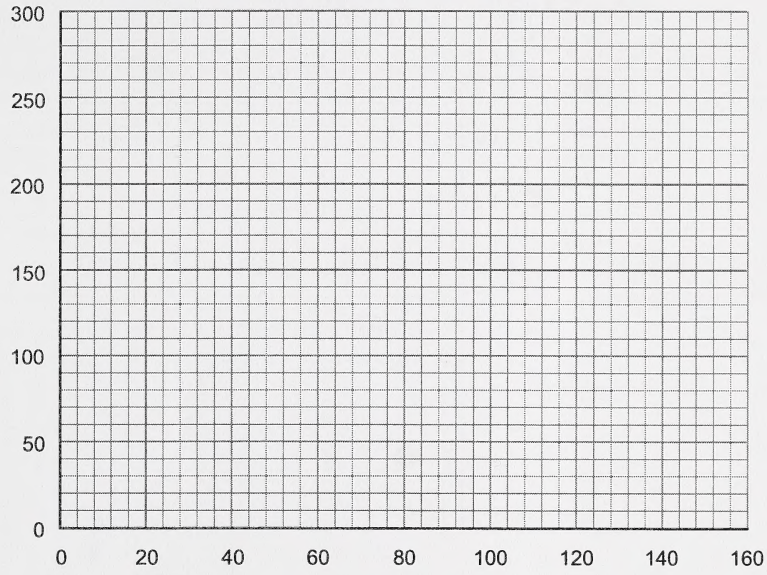
6. Write an equation for each of the following statements.

(1) **a.** The number of pieces of paper, n, is 144 times the number of packages, p.

(2) **b.** The number of chairs, c, is 3 more than 5 times the number of tables, t.

(4)

7. A container for holding fruit juices has a mass of 85 kg. Twenty-five litres of juice are added to the container. The combined mass is now 115 kg. Forty more litres are added. The mass rises to 163 kg. Draw a graph showing the relationship between the volume of juice and the total mass.



From your graph, estimate the total mass if 150 L of juice were added to an empty container.

(4)

8. Write an algebraic explanation of the following number trick.

Pick a number. _____

Double the number. _____

Add 10. _____

Double. _____

Subtract 16. _____

Divide by 4. _____

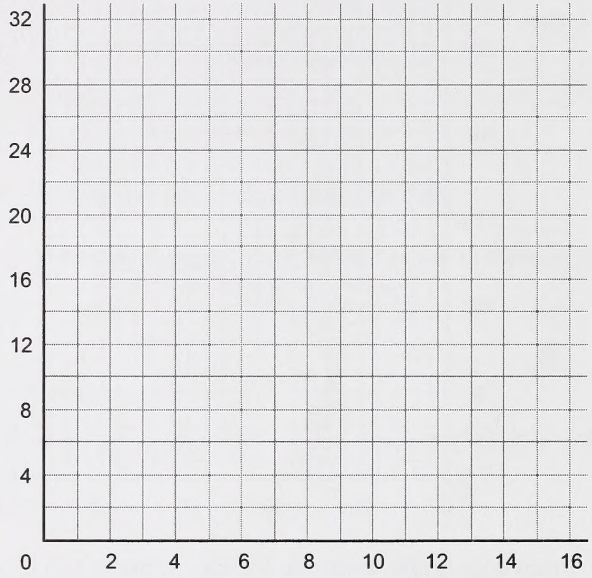
Subtract the original number. _____

You get 1. _____

(5) **9.** The following set of points is part of a linear relationship.

$$\{(2, 8), (5, 17), (10, 32), (4, 14)\}$$

Graph the points on the given co-ordinate plane.



From the graph, determine *a* and *b* for the following points $(a, 23)$ and $(8, b)$ on the graph. (**Hint:** Join the graphed points.)

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ASSIGNMENT BOOKLET 2B

MAT1225 Mathematics 14
Module 2: Section 2 Assignment and Final Module Assignment

FOR STUDENT USE ONLY	
Date Assignment Submitted: _____	(If label is missing or incorrect) Student File Number: _____
Time Spent on Assignment: _____	Module Number: _____

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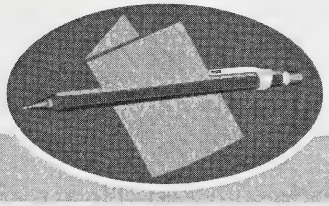
Mathematics 14

Module 2

Patterns and Equations

Assignment Booklet 2B



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FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Section 2 Assignment	30	
Final Module Assignment	40	
	70	

Teacher's Comments

Mathematics 14
Module 2: Patterns and Equations
Assignment Booklet 2B
Section 2 Assignment and Final Module Assignment
Learning Technologies Branch
ISBN 0-7741-2510-1

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General Public	
Other	

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ASSIGNMENT BOOKLET 2B
MATHEMATICS 14: MODULE 2
SECTION 2 ASSIGNMENT AND FINAL MODULE ASSIGNMENT

Your mark for this module will be determined in part by how well you do your assignments.

This Assignment Booklet is worth 70 marks out of the total 100 marks for the assignments in Module 2. The value of each assignment and each question is stated in the left margin.

Work slowly and carefully. If you have difficulty, go back and review the appropriate lessons.

Be sure to proofread your answers carefully.

(30)

Section 2 Assignment: Equations and Graphs

Read all parts of your assignment carefully and record your answers in the appropriate places. Clearly show how you arrived at your answers by showing your work.

(4)

1. Solve the following one-step equations. Show your work.

a. $m-3=-1$

b. $3p=18$

c. $\frac{x}{5}=-4$

d. $x+4=11$

Turn to Section 2: Lesson 2 in the Module 2 Student Module Booklet.

(4) **2.** Gerri paid $7.98 for a steak sandwich and a cappuccino. The cappuccino cost $2.75. What did the steak sandwich cost? Show your complete four-step solution.

Turn to Section 2: Lesson 3 in the Module 2 Student Module Booklet.

(4) **3.** Solve the following two-step equations. Show your work.

a. $12x - 7 = 17$

b. $\frac{x}{7} + 11 = 4$

Turn to Section 2: Lesson 4 in the Module 2 Student Module Booklet.

4. Use the left side-right side method to check the following possible solutions.

(1) **a.** Is $x = 13$ the solution to $x + 7 = 21$?

Left Side	Right Side

(1) **b.** Is $m = 3$ the solution to $3m - 7 = 2$?

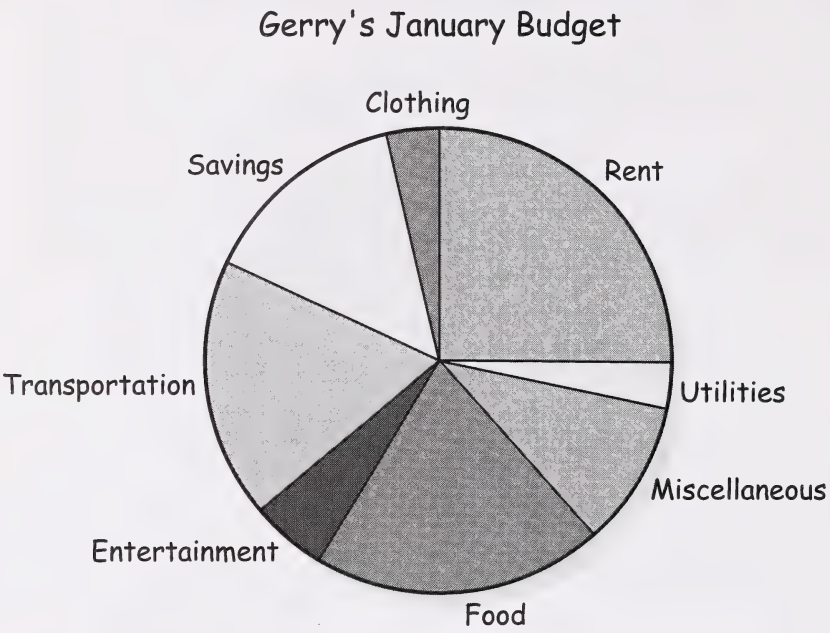
Left Side	Right Side

Turn to Section 2: Lesson 5 in the Module 2 Student Module Booklet.

(4) **5.** Leslie is paid $6.45 per hour working at the video store. He has saved $147.50 over the last few months. He wants to buy a DVD player that costs $197.99. How many more hours will he have to work? Show your complete four-step solution. (Round your answer to the nearest hour.)

Turn to Section 2: Lesson 6 in the Module 2 Student Module Booklet.

6. The total budget shown in the following pie graph is $1200.



(1) **a.** Approximately how much is spent on rent?

(1) **b.** Approximately how much is spent on food?

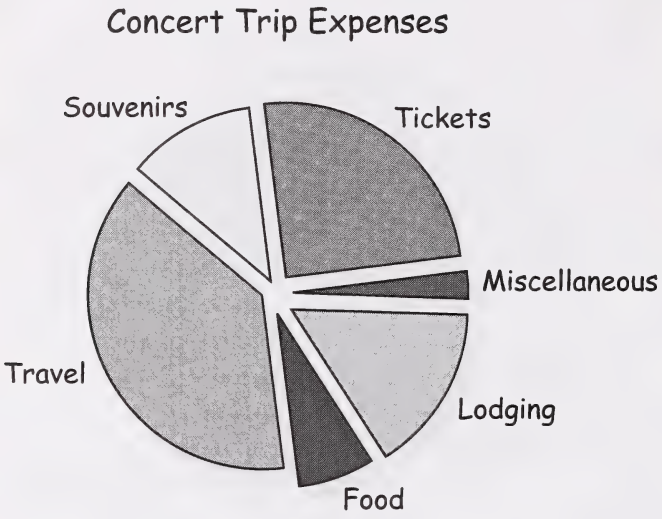
(4) **7.** Solve and verify the following equations. Show your work.

a. $4x + 6 = 26$

b. $\frac{q}{15} - 11 = -9$

(4) **8.** Liam went shopping for hockey equipment. When he came home, he had half the money he started with. Liam had purchased a new stick for $47.25 and a new pair of gloves for $135.75. How much money did Liam leave home with? Show your complete four-step method.

(2) **9.** Aaron went to a concert in Vancouver. The following pie graph shows Aaron's expenses. Which two expenses amount to about the same as the lodging expense?



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_____

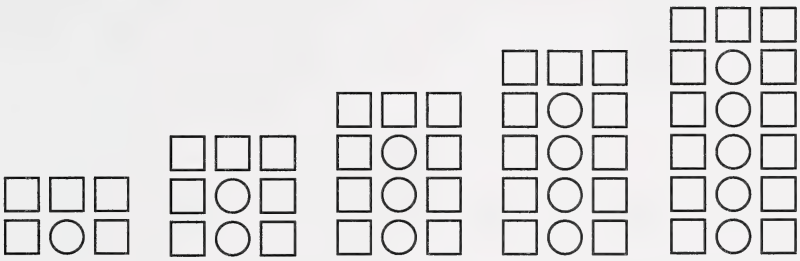
Turn to Section 2: Conclusion in the Module 2 Student Module Booklet.

40

Final Module Assignment

Read all parts of your assignment carefully and record your answers in the appropriate places. Clearly show how you arrived at your answers by showing your work.

1. Soon Yee made the following pictures with circles and squares.



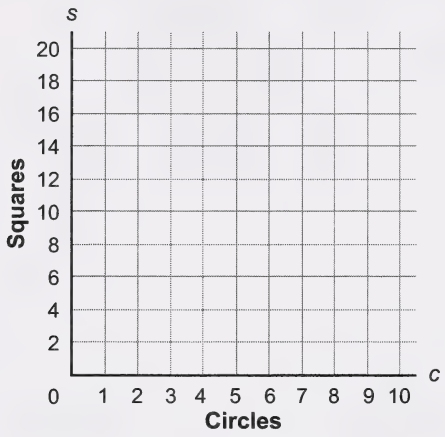
She started a table to show the number of circles and squares in each picture.

Picture	Number of Circles	Number of Squares
1	1	5
2	2	7
3		
4		
5		
6		

(2) **a.** Complete the table.

(1) **b.** Write an equation to show the relationship between the number of circles and the number of squares. Use *s* for squares and *c* for circles in your equation.

(3) **c.** List the ordered pairs from the chart. Write these ordered pairs in the order (circles, squares). Plot these points on the following grid.



(2) **d.** Estimate from the grid the number of squares in a picture with 8 circles. Indicate on the grid how you arrived at your answer.

(2) **e.** Use your equation to calculate the number of squares in a picture with 23 circles. Show your work.

2. Write an equation for each of these statements. Use x for the variable in each case.

(1) **a.** A number divided by 7 gives 4.

(1) **b.** 9 added to 6 times a number is 45.

(1) **c.** Subtracting 11 from the product of a number and 4 gives 29.

(3) **3.** An expression for the mass of 5 washers and 3 bolts is $5w + 3b$. Calculate the total mass if each washer has a mass (w) of 15 g and each bolt has a mass (b) of 125 g. Show your calculations.

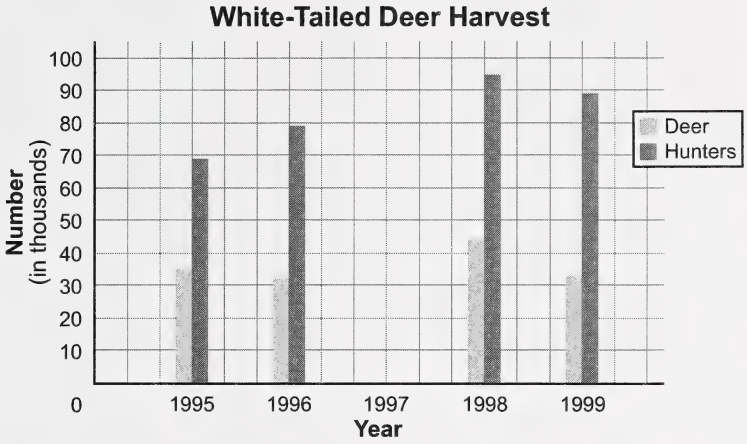
(2) **4.** Complete the following magic square. Show your calculations.

	16	
	36	1

5. Kim and Yeong are working on an environmental project together. The project is on the hunting of white-tailed deer in Alberta. They were unable to obtain data for 1997. They needed a table and a bar graph as part of the project. They each took part of the project to complete. Yeong hasn't finished the table yet.

(2) **a.** Use the information in Kim's bar graph to complete the table.

1995	66 874	35 019
1996	78 955	31 872
1998	94 717	42 028
1999	88 452	33 384



b. Complete the graph for 1997 using values you predict from the rest of the graph.

6. Solve and verify your solutions for these equations.

(2) **a.** Solve $x - 6 = 2$.

Verification

Left Side	Right Side

(3) **b.** Solve $3x + 2 = 11$.

Verification

Left Side	Right Side

(3) **c.** Solve $7 + \frac{x}{4} = 11$.

Verification

Left Side	Right Side

(2) **d.** Solve $4x = 72$.

Verification

Left Side	Right Side

(4) **7.** Louise walked to school with two of her friends. It took her 5 min longer than her friends because they lived closer to the school. Louise took 12 min to get to school. How long did it take her friends to walk to school? Use the four-step method and verify your solution to the equation.

(4) **8.** Abdullah and Zachary bought identical meals at the burger shop. In total, they left the shop with $14.98. They went into the shop with $30. What did one meal cost? Use the four-step method and verify your solution to the equation.

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